



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,791	03/22/2000	Takenori Goto	000350	8585

23850 7590 12/31/2003

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER

NGUYEN, TUAN N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/532,791

Applicant(s)

GOTO ET AL.

Examiner

Tuan N Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Paul  
SPER 28

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9,12. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. In respond to applicant's amendment filed September 9, 2003, claims 1, and 11 have been amended. Claims 1-21 are pending.
2. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of new ground of rejection.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 11 recite a semiconductor laser device comprising: a first semiconductor layer made of nitride including an active layer; *a second semiconductor layer made of nitride along a direction formed on said first semiconductor layer; and a current blocking layer formed on first semiconductor layer on both sides of said second semiconductor layer*, said second semiconductor layer including a cladding layer which comprises a lower layer having a first width at its lower end and upper layer having a second width larger than said first width at its lower end, both of said lower layer and said upper layer having a larger band-gap than that of said active layer. It is vague and indefinite as to structural of the current blocking layer and the second semiconductor layer made of nitride based. There is insufficient structure and

Art Unit: 2828

relationships, which render the claims vague and indefinite. Claims 2-10, 12-21 reject based on the same reason.

With respect to claim 3, it is vague and indefinite as to "a third semiconductor layer formed on said cladding layer *having a carrier concentration which is not less than that of cladding layer.*"

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b) that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,2,4, 9-12, 15, 20, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Mogi Naoto (JP 60003181).

With respect to claims 1 and 11, 15 Nato 'JP 181 shows in figures 2b-d, a first semiconductor layer made of nitride including an active layer; a second layer made of nitride along a direction; and a current blocking layer formed on first semiconductor layer on both sides of said second semiconductor layer, a second semiconductor layer including a cladding layer which comprises a lower layer having a first width at its lower end and upper layer having a second width larger than said first width at its lower end, both of said lower layer and said upper layer having a larger band-gap than that of said active layer. (Fig 2b-d: 11-21) (Page 2: Col 3-4) (Page 3 : Col.3: 3-4) (Page 4: 1-4). Since claims 11, 12, 15, 20, 21 recites the same or identical elements/limitations it is inherent to use patents JP 181 to recite the method of fabricating a semiconductor laser device, product by process.

Art Unit: 2828

With respect to claims 2, 4, 9, 10, Nato 'JP 181 discloses the cladding has the function of confining light in said active layer, the third layer is a contact layer, and first second third nitride layer contains at least gallium. (Fig 2b-d: 11-21) (Page 2: Col 3-4) (Page 3 : Col.3: 3-4) (Page 4: 1-4).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

7. Claims 3, 5-8, 13,14,16-19 are rejected under 35 U.S.C. 103 (a) as being anticipated by Mogi Naoto (JP 60003181).

Naoto '181 discloses all the above, further requires a third semiconductor layer having a carrier concentration which is not less than cladding layer, a third semiconductor layer formed on said cladding having a smaller band-gap than that of said cladding layer, or lower cladding layer has a first constant width from its lower end to its upper end while the upper layer has a width

Art Unit: 2828

gradually decreases upward from said second width. Naoto 'JP 181 did not explicitly disclose the amount of concentration, amount band-gap width, it is within one skill of the art to recognize that discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. In addition, since Naoto shows a structure having lower layer smaller than the upper layer, rearranging or shaping the structural is within one skill in the art.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Communication Information***

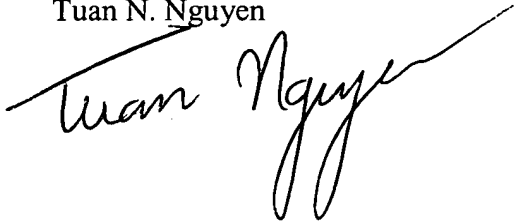
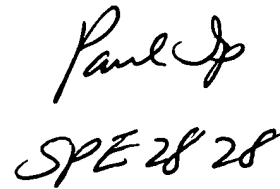
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756 or (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

Art Unit: 2828

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098 or (571) 272-1941. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long horizontal stroke extending from the end of the signature.A handwritten signature in black ink, appearing to read 'Paul Ip', with the date 'SPE 28 28' written below it.